

Attorney Docket No.: 2523-082

Response to Action Mailed November 30, 2004  
Serial No. 10/735,820**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

- 1        Claim 1 (Currently Amended): A coreless motor comprising:
  - 2            a ring-shaped coil yoke fitted to the interior of a casing, which has a
  - 3            conductive[[-use]] coil connected to a ring-shaped magnet, whose external
  - 4            circumference face ~~stands opposed to~~ opposes the internal circumference face of
  - 5            the coil yoke, and the coil designed to revolve jointly with the rotating axis
  - 6            following power input to the said coil;
- 7            wherein the said coil confronts the upper and lower faces of the magnet and
- 8            consists of a flat portion whose plane part takes an arc form and of a curved-and-
- 9            folded portion composed of a winding unit confronting the external circumference
- 10          side face of the magnet, while the section from one end of the lead wire
- 11          composing these winding units to its other end constitutes a continuous hollow
- 12          unit;
- 13          wherein a thin-sheet-shaped flange is installed on the lower part of the coil
- 14          holder fixed to the periphery of the said rotating axis, ~~while multiple axis and a~~
- 15          plurality of said coils are attached so as to be arranged in line with the
- 16          circumference direction of the magnet by fixing the flat portion on the lower side
- 17          of each coil to the flange; and
- 18          wherein ~~thin/round thin~~ thin annulus-shaped upper-side reinforcing plates are

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19 attached to the flat portion on the upper side of each coil.

1       Claim 2 (Currently Amended): The coreless motor stated in claim 1,  
2 which is constituted by attaching a thin/annulus thin ring-shaped lower-side  
3 reinforcing plate to the further below part of the flat portion of the coil, which is  
4 fixed to the lower face of the said coil holder flange.

1       Claim 3 (Currently Amended): The coreless rotor stated in claim 2,  
2 whose lower-side reinforcing plate mentioned above is installed in a space up to  
3 the coil holder flange so as to be in parallel with the flange ~~through the mediation~~  
4 by means of a spacer, whose length is almost equal to the thickness of the lower-  
5 side flat portion of the coil, while the flat lower-side portion of the coil is put into,  
6 and fixed to, the gap formed by the spacer between the flange and the lower-side  
7 reinforcing plate.

1       Claim 4 (Currently Amended): The coreless motor stated in claim 1,  
2 [[whose]] wherein the upper-side reinforcing plate mentioned above consists of  
3 conductive materials, with one end of each coil linked to [[this]] the upper-side  
4 reinforcing plate, and the other end of the coil connected to the commutators  
5 installed around the rotating axis in the lower portion of the coil holder.

1       Claim 5 (Currently Amended): A coreless motor comprising:

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2        a ring-shaped coil yoke fitted to the interior of a casing, which has a  
3        conductive[[-use]] coil connected to a ring-shaped magnet, whose external  
4        circumference face stands opposed to the internal circumference face of the coil  
5        yoke, and the coil designed to revolve jointly with the rotating axis following  
6        power input to the said coil;

7        wherein the said coil confronts the upper and lower faces of the magnet and  
8        consists of a flat portion whose plane part takes an arc form and of a curved-and-  
9        folded portion composed of a winding unit confronting the external circumference  
10      side face of the magnet, while the section from one end of the lead wire  
11      composing these winding units to its other end constitutes a continuous hollow  
12      unit;

13        wherein the said magnet is ~~4-polar magnetization arranged in the radius~~  
14        ~~direction, and as for the coils mentioned above, 3~~ comprises four poles arranged in  
15        the radial direction and three of said coils are installed around the rotating axis;  
16        and

17        wherein ~~for commutators fixed around the rotating axis, 6 segment ones are~~  
18        ~~used, with 2~~ a six-segment commutator is fixed around the rotating axis, with two  
19        brushes set in positions each forming an angle of 90° in relation to the commutator.

1        Claim 6 (Currently Amended): A coreless motor comprising:  
2        a ring-shaped coil yoke fitted to the interior of a casing, which has a  
3        conductive[[-use]] coil connected to a ring-shaped magnet, whose external

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4 circumference face stands opposed to the internal circumference face of the coil  
5 yoke, and the coil designed to revolve jointly with the rotating axis following  
6 power input to the said coil;

7 wherein the said coil confronts the upper and lower faces of the magnet and  
8 consists of a flat portion whose plane part takes an arc form and of a curved-and-  
9 folded portion composed of a winding unit confronting the external circumference  
10 side face of the magnet, while the section from one end of the lead wire  
11 composing these winding units to its other end constitutes a continuous hollow  
12 unit;

13 wherein the said magnet is ~~2 polar magnetization arranged in the diameter~~  
14 ~~direction, and as for the coils mentioned above,~~ ~~3~~ comprises two poles arranged in  
15 the circumferential direction and three of said coils are installed around the  
16 rotating axis; and

17 wherein ~~for commutators fixed around the rotating axis, 3 segment ones are~~  
18 ~~used, with 2 a three-segment commutator is fixed around the rotating axis, with~~  
19 two brushes set in positions parallel with each other in relation to the commutator.

1 Claim 7 (Currently Amended): A coreless motor as recited in claim 1,  
2 wherein the aforementioned magnet is fixed to the external circumference of the  
3 ring-shaped magnet ~~holder, holder~~ which is equipped with a cylinder unit,  
4 designed to hold a bearing, ~~bearing~~ in its upper [[part,]] part with this cylinder unit  
5 engaged with, and fitted to, a boss formed in the center of the top panel of the

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6 casing, while the said rotating axis is held, ~~in a revolution possible way~~, held by a  
7 bearing installed within the said cylinder unit.

1       Claim 8 (Currently Amended): The coreless motor stated in claim 7,  
2 whose magnet holder mentioned above has a dented portion on its lower side, with  
3 the upper portion of the coil holder composed so as to touch this dented portion of  
4 the magnet ~~holder~~ holder.

1       Claim 9 (Currently Amended): A coreless motor as recited in claim 1,  
2 wherein the internal surface of the coil yoke is shaped ~~in line to corrcspnd~~ with  
3 the ~~extenal~~ external circumference side face and ~~upper/lower~~ upper and lower  
4 faces of the said coil, and the coil yoke is formed by bonding together the upper  
5 half portion of the coil yoke that contains the upper half of the coil and its lower  
6 half portion that contains the lower half of the coil.

1       Claim 10 (Currently Amended): A coreless motor as recited in claim 1,  
2 wherein the said magnet is composed by arranging 4 arc-shaped magnets,  
3 individually magnetized in the ~~radius~~ radial direction, in a ring form. [[.]]

1       Claim 11 (Currently Amended): A coreless motor as recited in claim 5,  
2 wherein the ~~aforementioned~~ said magnet is fixed to the external circumference of  
3 the ring-shaped magnet holder, which is equipped with a cylinder [[unit,]] unit

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4 designed to hold a bearing, bearing in its upper part, with this said cylinder unit  
5 engaged with, and fitted to, a boss formed in the center of the top panel of the  
6 casing, while the said rotating axis is held, in a revolution possible way, held by a  
7 bearing installed within the said cylinder unit.

1 Claim 12 (Currently Amended): A coreless motor as recited in claim 6,  
2 wherein the aforementioned said magnet is fixed to the external circumference of  
3 the ring-shaped magnet holder, which is equipped with a cylinder [[unit,]] unit  
4 designed to hold a bearing, bearing in its upper part, with this said cylinder unit  
5 engaged with, and fitted to, a boss formed in the center of the top panel of the  
6 casing, while the said rotating axis is held, in a revolution possible way, held by a  
7 bearing installed within the said cylinder unit.

1 Claim 13 (Currently Amended): A coreless motor as recited in claim 5,  
2 wherein the internal surface of the coil yoke is shaped ~~in-line to correspond~~ with  
3 the ~~extenal~~ external circumference side face and ~~upper/lower~~ upper and lower  
4 faces of the said coil, and the coil yoke is formed by bonding together the upper  
5 half portion of the coil yoke that contains the upper half of the coil and its lower  
6 half portion that contains the lower half of the coil.

1 Claim 14 (Currently Amended): A coreless motor as recited in claim 6,  
2 wherein the internal surface of the coil yoke is shaped ~~in-line to correspond~~ with

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3 the extenal external circumference side face and upper/lower upper and lower  
4 faces of the said coil, and the coil yoke is formed by bonding together the upper  
5 half portion of the coil yoke that contains the upper half of the coil and its lower  
6 half portion that contains the lower half of the coil.

1       Claim 15 (Currently Amended): A coreless motor as recited in claim 5,  
2 wherein the said magnet is composed by arranging 4 arc-shaped magnets,  
3 individually magnetized in the radius radial direction, in a ring form.[[.]]

1       Claim 16 (Currently Amended): A coreless motor as recited in claim 6,  
2 wherein the said magnet is composed by arranging 4 arc-shaped magnets,  
3 individually magnetized in the radius radial direction, in a ring form.[[.]]